

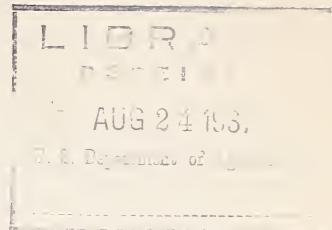
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ANALYSIS OF 104 ACCOUNT BOOKS  
KEPT BY HOME DEMONSTRATION WORKERS  
For a Twelve-Month Period, 1936-37

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Introduction

The account books included in this analysis are those kept by home demonstration workers for a twelve-month period ending in the spring of 1937. The report is limited to "one-person" families where the woman is the sole member of the economic household, although there may be one or more persons living elsewhere who are dependent on her for whole or partial support. The women are members of the Extension Service staff and are employed in 22 States and the District of Columbia. No information concerning their living arrangements is available.

In Table 1 is given the number of account books, by States. These account books present in detail all of the expenditures during the year that the record was kept. No value of goods received as gift or pay is shown in the record. The information on money income during the year was not considered as accurate and complete as that on total living expense. Therefore, for the purpose of this analysis, the records have been classified by expenditures for living rather than by money income class.

Relation between Living Expense and Money Income

The relation between expense for living and total money income is shown in Table 2. The average (mean) expense for living was \$1,932, with a standard deviation of \$491; while the average total money income was \$2,642, with a standard deviation of \$853. The standard deviation measures the extent to which the individual values are scattered about the mean. A deviation exceeding the standard deviation occurs about once in three trials; twice the standard deviation, about once in 22 trials; and thrice the standard deviation, only once in 370 trials. The range of three times the standard deviation on either side of the mean amply takes in all of the observations.

The correlation between expense for living and total money income, as measured by the correlation coefficient  $r$ , was  $.65 \pm .04$ . This indicates a rather close positive association not likely to have been caused by chance. As the total money income increased, the expense for living also increased.

The expense for living tended to increase in almost a one-to-one ratio with an increase in all money income over \$461. This is shown by the equation expressing the regression of living expense on money income, as stated at the bottom of Table 2. These regression equations give the "best" (statistically) expense for living for a given money income, and the "best" money income for a given living expense. For example, for a given money income of \$2,000, the "best" expense for living was \$1,562; for a given living expense of \$2,000, the "best" money income was \$2,854. (Note that the word "best" is used statistically, with no implications as to wise management practices.)

The expense for living reported by the home demonstration workers varied from \$839 to \$3,275. Eighteen percent of the women reported a total living expense under \$1,500; 39 percent, from \$1,500 to \$1,999; 30 percent, from \$2,000 to \$2,499; and 13 percent, \$2,500 and over.

The range of total money income during the account book year was from \$1,183 to \$5,048. Of the \$2,642 average money income, 73 percent was expended for living; 2 percent, for business expense; and 21 percent, for investments, savings, and debt retirement. The remaining 4 percent was reported as cash on hand at the end of the year. The average money income corresponding to each expense for living class is stated in Table 3.

Expense for Each Item of Goods and Services

The average money expenditure for living was \$1,932. Of this amount, 12 percent was expended for food; 14 percent, for clothing; 14 percent, for housing and furnishings; 5 percent, for household operation; 29 percent, for automobile and other transportation; 6 percent, for education; 3 percent, for medical care; 3 percent, for personal care; 13 percent, for gifts, community welfare, and taxes; and 1 percent for unclassified expenditures. (See Table 4.) It is thought that the automobile expense reported in certain account books covered both living and business expense, instead of only the former.\*

As the expenditure for living increased, the amount expended for each of these items of goods and services also increased, except for education and recreation. Of the total expenditure for living, the percentage expended for housing and furnishings, for household operation, and for gifts, community welfare, and taxes increased as the expense for living increased. The percentage expended for food, for clothing, and for education and recreation decreased as the expense for living increased. The percentage expended for medical care, and for personal care remained about constant as the expense for living increased. No trend was observed in the percentage expended for automobile and other transportation.

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\* It is suggested that, for another year, each account book should be accompanied by a statement as to whether the automobile expense for business was repaid. The automobile expense for living would be obtained by deducting the business reimbursement from the total automobile expense. The reimbursement should not be included in the total money income if business expense was deducted.

#### Expense for Each Item of Clothing

Reclassifying the 104 women according to the amount they expended for clothing (instead of according to total living expense), it is shown that 9 percent of them spend under \$150; 37 percent, from \$150 to \$249; 34 percent, from \$250 to \$349; 12 percent, from \$350 to \$449; and 8 percent, \$450 and over. Detailed expenditure for each item of clothing was reported by 94 of the 104 women.

Of the \$271 average expenditure for clothing, as shown in Table 5, 16 percent was expended for coats and outer garments; 33 percent, for suits and dresses; 12 percent, for underwear, night-wear, and hose; and 11 percent, for footwear. The remaining 23 percent was divided among headwear, sportswear, accessories, home sewing, cleaning and pressing, and other unclassified items.

As the expenditure for clothing increased, the amount expended for each of these items also increased. Of the total expenditure for clothing, the percentage expended for coats and outer garments, for accessories, and for cleaning and pressing increased as the expense for clothing increased. The percentage expended for headwear, underwear, footwear, and home sewing decreased as the expense for clothing increased. No trend was observed in the percentage expended for suits and dresses, sportswear, and other unclassified items.

#### An Example of a Possible Special Analysis

Recognizing the limitations of the data, an attempt has been made to give a further breakdown of the expenditure for footwear, as an example of the possibilities of more detailed analysis when records furnish adequate data. It is assumed that of the entries under footwear, all expenditures below \$2 were for repairs, and all entries of \$2 and over were for shoes. Since these assumptions may not be tenable, the figures which follow can not be accepted as reliable findings, but only as examples of the type of findings which might be obtained from detailed statements of expenses.

The 32 home demonstration workers who expended \$150 to \$249 for clothing during the year spent, on an average, \$26.69 for footwear. Of this, \$2.87 was for repairs and \$23.82, for shoes. The 33 home demonstration workers who expended \$250 to \$349 for clothing during the year spent an average of \$29.63 for footwear, of which \$3.10 was for repairs and \$26.53, for shoes.

In Table 6 is a frequency distribution of the cost per pair of shoes, as entered in the account books of the workers spending \$150 to \$249, and \$250 to \$349 for clothing per annum. The 32 women in the former class purchased 129 pairs of shoes, while the 33 women in the latter class purchased 133 pairs. This gives an average, for each class, of about 4 pairs of shoes per woman per annum.

The women in the lower expense class paid approximately \$5.91 per pair of shoes, while the other women spent \$6.58 per pair. The workers spending less money on clothes tended to purchase shoes costing from \$3.95 to \$7.50 per pair, while those spending more money purchased shoes costing from \$4.03 to \$8.75 per pair. The maximum expenditure was one entry of \$15.00 reported by a worker in the group spending under \$250 for clothes, while the highest price paid by the other group was \$13.25 per pair.

That the number of purchases of shoes is so nearly the same at each of three price ranges for a given expense group seems to be due to purchases of shoes at different prices by the same woman. Thus the 37 pairs of shoes costing \$2.00 to \$3.99 (bought by women whose total clothing expense was \$150 to \$249) may represent shoes of the less expensive types sometimes bought for summer; the purchases of practically the same number of shoes costing \$6.00 to \$7.99 may have been made by the same women, buying more expensive, durable shoes for work wear.

An analysis of this type indicates the most usual prices paid for a given article. It should be helpful in planning a clothing budget, since it goes a step beyond total expenditures and suggests what some women have found to be a fairly satisfactory price, within a given total clothing expense level. Thus the 32 women spending \$150 to \$249 on clothes, seem to be concentrating their purchases of shoes at three expense levels. A person customarily spending more than \$8.00 might question her own buying habits; she might have good reason for her more expensive purchases, but she would scrutinize them and make a decision as to whether they were wise for her. If this table could be presented to the group of 32 women who did the buying, and there could be group discussion as to their relative satisfactions from their different priced purchases, the value of the analysis would be much increased.

It would be of interest to analyze the data according to the average expenditure for hats, suits, dresses, and other items of clothing. However, the majority of the account books do not have sufficient identification of the expenditure entries to warrant this further analysis.

TABLE 1. NUMBER OF ACCOUNT BOOKS, by States

State	Number of account books
Arkansas . . . . .	14
Arizona . . . . .	2
District of Columbia . . . . .	2
Georgia . . . . .	1
Illinois . . . . .	1
Kansas . . . . .	3
Kentucky . . . . .	1
Louisiana . . . . .	3
Maine . . . . .	4
Michigan . . . . .	15
Mississippi . . . . .	10
Missouri . . . . .	4
Montana . . . . .	2
Nebraska . . . . .	5
New Hampshire . . . . .	3
New York . . . . .	1
Ohio . . . . .	4
Oklahoma . . . . .	3
South Carolina . . . . .	2
Tennessee . . . . .	12
Virginia . . . . .	3
West Virginia . . . . .	7
Wyoming . . . . .	2
Total	104

TABLE 2. RELATION BETWEEN EXPENSE FOR LIVING AND TOTAL MONEY INCOME

Expense for living class	Total money income						All classes
	\$1000 - \$1499	\$1500 - 1999	\$2000 - 2499	\$2500 - 2999	\$3000 - 3499	\$3500 and over	
Under \$1000	0	1	1	0	0	0	2
1000 - 1499	0	2	7	1	0	0	17
1500 - 1999	0	0	7	21	9	2	41
2000 - 2499	0	0	0	8	17	4	31
2500 - 2999	0	0	0	0	3	2	11
3000 & over	0	0	0	0	0	1	2
All classes	0	3	15	36	30	9	104

Regression equations:

$$\text{Total money income (in dollars)} = \$461 + \$1.13 \text{ expense for living (in dollars)}$$

$$\text{Expense for living (in dollars)} = \$944 + \$ .37 \text{ total money income (in dollars)}$$

TABLE 3. AVERAGE INCOME AND EXPENSE FOR LIVING,  
by Expense for Living Class

Expense for living class	Number of account books	Total money income	Money expense for living	Cash business expense	Investments, savings, debt retirement	Cash on hand
Under \$1,500	19	\$1,981	\$1,283	\$57	\$535	\$106
1,500 - 1,999	41	2,394	1,750	49	524	71
2,000 - 2,499	31	2,735	2,221	74	402	38
2,500 & over	13	4,169	2,765	84	1,031	289
All classes	104	2,642	1,932	62	553	95

TABLE 4. AVERAGE EXPENSE FOR EACH ITEM OF GOODS AND SERVICES, AND PERCENTAGE OF TOTAL LIVING EXPENSE,  
by Expense for Living Class

Expense for living class	Number of account books	Money expense for living	Average expense							Gifts, commun- ity wel- fare, taxes	Un- class- ified
			Food	Clothing	Housing, furnish- ings	House- hold opera- tion	Auto- mobile and other transpor- tation	Educa- tion, recre- ation	Medical care		
Under \$1,500	19	\$1,283	\$203	\$216	\$159	\$36	\$293	\$131	\$49	\$147	\$14
1,500 - 1,999	41	1,750	226	234	230	74	537	123	54	44	207
2,000 - 2,499	31	2,221	228	332	333	105	694	117	50	60	270
2,500 and over	13	2,765	273	330	467	223	698	116	138	93	400
All classes	104	1,932	228	272	277	95	559	122	60	56	239
Percentage of total living expense											
Under \$1,500	19	100	16	17	12	3	23	10	3	4	11
1,500 - 1,999	41	100	13	13	4	31	7	3	3	3	12
2,000 - 2,499	31	100	10	15	5	31	5	2	3	3	12
2,500 and over	13	100	10	12	17	8	25	4	5	3	15
All classes	104	100	12	14	14	5	29	6	3	3	13

Table 5

AVERAGE EXPENSE FOR EACH ITEM OF CLOTHING, AND PERCENTAGE OF TOTAL CLOTHING EXPENSE,  
by Expense for Clothing Class

Expense for clothing class	Number of account books	Expense for clothing	Hats, caps, berets	Coats, jackets, furs, sweaters, raincoats	Suits, dresses, aprons, skirts, blouses	Sports-wear, bathing suits, beach robes	Under-night-wear, bathrobes, hose	Foot-wear, including repairs	Gloves, hanks., umbrellas, purses, jewelry, etc.	Materials, paid help for sewing	Cleaning and pressing	Other	\$5
Average expense													\$15
Under \$150	9	\$106	\$7	\$4	\$30	\$1	30	27	12	17	8	1	
150 - 249	32*	198	11	21	70	1	33	30	19	19	22	10	
250 - 349	33**	293	15	44	97	4	42	43	26	30	20	7	
350 - 449	13	388	21	59	137	3	50	46	26	24	30	3	
450 & over	7***	493	26	159	128	1	33	31	17	19	16	5	
All classes	94	271	15	43	90	2							
Percentage of total clothing expense													5
Under \$150	9	100	7	3	36	1	14	15	5	9	5	5	
150 - 249	32*	100	6	10	36	1	15	13	6	8	4	1	
250 - 349	33**	100	5	15	33	1	12	10	7	7	7	3	
350 - 449	13	100	5	15	35	1	11	11	7	8	5	2	
450 & over	7***	100	5	32	26	1	10	9	5	5	6	1	
All classes	94	100	6	16	33	1	12	11	6	7	6	2	

\* Plus 7 account books with detailed clothing expenditures not listed.

\*\* Plus 2 account books with detailed clothing expenditures not listed.

\*\*\* Plus 1 account book with detailed clothing expenditures not listed.

TABLE 6. FREQUENCY DISTRIBUTION OF EXPENSE PER PAIR OF SHOES,  
by Two Classes of Clothing Expense  
(Tentative; Based upon Assumptions Outlined in Text)

Expense per pair of shoes	Purchases by 32 women spending \$150-249 for clothing per annum	Purchases by 33 women spending \$250-349 for clothing per annum
\$2.00 - \$3.99	37	24
4.00 - 5.99	30	35
6.00 - 7.99	38	31
8.00 - 9.99	15	25
10.00 - 11.99	6	11
12.00 and over	3	7
Total pairs of shoes	129	133
Average number of pairs of shoes purchased	4.0	4.1
Average expense per pair of shoes	\$5.91	\$6.58
Median expense per pair of shoes	\$5.95	\$6.50
Range of expense for 50% of purchases	\$3.95 to \$7.50	\$4.03 to \$8.75



